

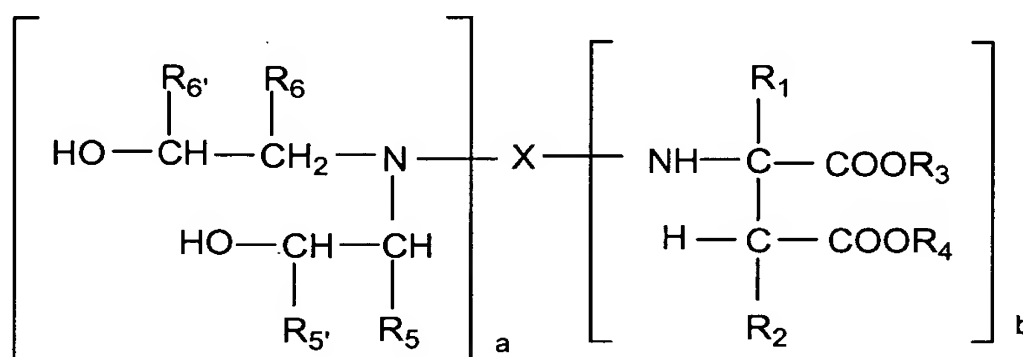
REMARKS

Claims 1-4 are pending in the application.

Rejections under 35 U.S.C. § 103(a)

Claims 1-4 stand rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 5,243,012 to Wicks et al. (hereinafter "Wicks"), 5,236,741 to Zwiener et al. (hereinafter Zwiener '741"), 5,126,170 to Zwiener et al. (hereinafter Zwiener '170") or Chem Abstracts 98: 198688.

The present invention is directed to an aspartate of the formula:



where

X represents an m-valent organic residue obtained by removing the primary amino group or groups from a mono or polyamine which has (cyclo)aliphatically bound amino groups and a number average molecular weight of 60 to 6000, and which may contain further functional groups that either are reactive with isocyanate groups or are inert to isocyanate groups at temperatures of up to 100°C,

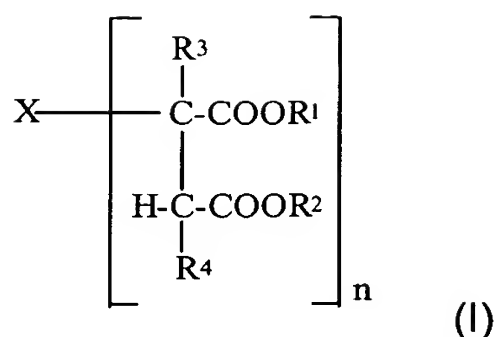
R₁ and R₂ may be identical or different and represent hydrogen or organic groups which are inert towards isocyanate groups at a temperature of 100°C or less,

R₃ and R₄ may be identical or different and represent organic groups which are inert towards isocyanate groups at a temperature of 100°C or less,

- R_5 represents hydrogen or together with $R_{5'}$ and the carbon atoms to which they are connected forms a six-membered cycloalkyl group, with said cycloalkyl group being substituted with from 0 to 3 alkyl groups having from 1 to 3 carbon atoms,
- $R_{5'}$ represents a moiety selected from the group consisting of
- i) C_1 to C_8 alkyl groups which may be interrupted with an oxygen atom,
 - ii) C_6 to C_{10} aryl groups, which may be substituted with up to three alkyl groups having from 1 to 3 carbon atoms and iii) C_6 to C_{12} cycloalkyl groups, which may be substituted with up to three alkyl groups having from 1 to 3 carbon atoms,
- R_6 represents hydrogen or together with $R_{6'}$ and the carbon atoms to which they are connected forms a six-membered cycloalkyl group, with said cycloalkyl group being substituted with from 0 to 3 alkyl groups having from 1 to 3 carbon atoms,
- $R_{6'}$ represents a moiety selected from the group consisting of
- i) C_1 to C_8 alkyl groups which may be interrupted with an oxygen atom,
 - ii) C_6 to C_{10} aryl groups, which may be substituted with up to three alkyl groups having from 1 to 3 carbon atoms and iii) C_6 to C_{12} cycloalkyl groups, which may be substituted with up to three alkyl groups having from 1 to 3 carbon atoms,
- with the proviso that R_5 and R_6 are the same and $R_{5'}$ and $R_{6'}$ are the same, and
- a and b represent integers of from 1 to 5, provided that the sum of a and b is from 2 to 6.

Wicks

Wicks discloses a coating composition for the preparation of a polyurea coating which contains a) a polyisocyanate component, b) at least one compound corresponding to the Formula I



where X represents an organic group which has a valency of n and is inert towards isocyanate groups at a temperature of 100°C or less, R¹ and R² may be identical or different and represent organic groups which are inert towards isocyanate groups at a temperature of 100°C or less, R³ and R⁴ may be identical or different and represent hydrogen or organic groups which are inert towards isocyanate groups at a temperature of 100°C or less and n represents an integer with a value of at least 2, and c) 0.001 to 5 weight percent, based on the weight of components a) and b), of a tin(IV) compound which is a catalyst for the reaction between isocyanate groups and hydroxyl groups.

The Examiner suggests that Wicks discloses a compound according to formula (I) based on the reaction product of primary amines with maleic or fumaric acid esters. The Examiner admits that Wicks does not disclose the formula of present Claim 1, but suggests that the disclosure of reaction products of primary polyamines with maleic or fumaric acid esters and the use of polyether polyols suitable for the preparation of isocyanate groups containing prepolymers would make it obvious to prepare the claimed aspartate. Applicants respectfully request reconsideration.

In Wicks, the group -X is inert towards isocyanate groups. The corresponding group in the presently claimed aspartate is -X[N-(CH₂CH₂OH)₂]_a. As one skilled in the art will readily recognize, the hydroxyl groups in the presently claimed structure will readily react with isocyanate groups. Thus, the presently claimed aspartate does not contain a group X that is inert towards isocyanate groups as required in Wicks.

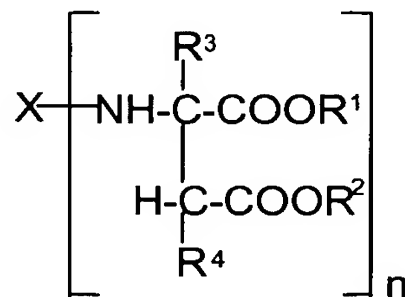
Further, because Wicks requires a structure inert towards isocyanate groups and the present invention claims a structure that is reactive with isocyanate groups, Wicks teaches away from the present invention and cannot render Claims 1-4 obvious.

The Examiner also suggests that Wicks discloses “that the hydroxyl group containing polylactones, especially polycaprolactones, (see col. 4, lines 24-28 of Wicks[]).” However, this disclosure has nothing to do with the compound of formula 1, the cited disclosure refers to polyhydroxyl compounds that can be used to make isocyanate group-containing prepolymers with polyisocyanates. Thus, there is no disclosure in Wicks that remotely suggests using polycaprolactones as the group X in formula 1 as the Examiner suggests.

For all of the reasons stated above, the rejection of Claims 1-4 under 35 U.S.C. § 103(a) over Wicks should be withdrawn.

Zwiener '741 and 170

Zwiener '741 and '170 both disclose a process for preparing a polyurethane coating by coating a substrate with a coating composition containing a) a polyisocyanate component and b) an isocyanate-reactive component containing at least one compound corresponding to Formula I



where X represents an organic group which has a valency of n and is inert towards isocyanate groups at a temperature of 100°C or less, R¹ and R² may be identical or different and represent organic groups which are inert towards isocyanate groups at a temperature of 100°C or less, R³ and R⁴ may be identical or different and represent hydrogen or organic groups which are inert towards isocyanate groups at a temperature of 100°C or less and n represents an integer with a value of at least 2, and curing the coating composition at a temperature of °C or less.

The Examiner suggests that Zwiener '741 and '170 disclose a compound according to formula (I) based on the reaction product of primary amines with maleic or fumaric acid esters. The Examiner admits that neither of Zwiener '741 or '170 disclose the formula of present Claim 1, but suggests that the disclosure of reaction products of primary polyamines with maleic or fumaric acid esters and the use of polyether polyols suitable for the preparation of isocyanate groups containing prepolymers would make it obvious to prepare the claimed aspartate. Applicants respectfully request reconsideration.

In Zwiener '741 and '170, the group $-X$ is inert towards isocyanate groups. The corresponding group in the presently claimed aspartate is $-X[N-(CH_2CH_2OH)_2]_a$. As one skilled in the art will readily recognize, the hydroxyl groups in the presently claimed structure will readily react with isocyanate groups. Thus, the presently claimed aspartate does not contain a group X that is inert towards isocyanate groups as required in Zwiener '741 or '170.

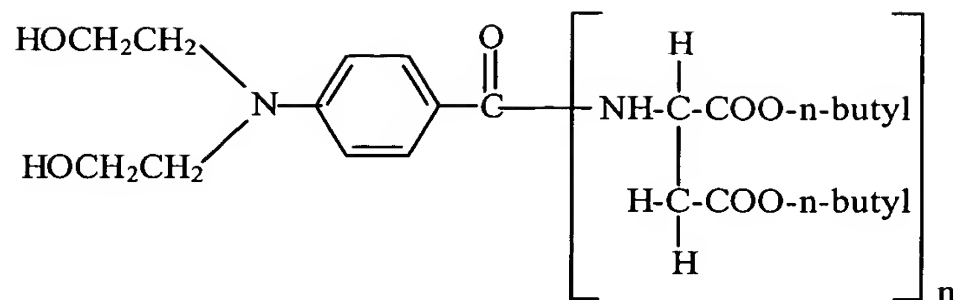
Further, because both of Zwiener '741 and '170 require a structure inert towards isocyanate groups and the present invention claims a structure that is reactive with isocyanate groups, Zwiener '741 and '170 teach away from the present invention and cannot render Claims 1-4 obvious.

The Examiner also suggests that Wicks discloses "that the hydroxyl group containing polylactones, especially polycaprolactones, (see ... col. 3, lines 56-59 of '741; col. 3, lines 49-52 of '170)." However, this disclosure has nothing to do with the compound of formula 1, the cited disclosure refers to polyhydroxyl compounds that can be used to make isocyanate group-containing prepolymers with polyisocyanates. Thus, there is no disclosure in Wicks that remotely suggests using polycaprolactones as the group X in formula 1 as the Examiner suggests.

For all of the reasons stated above, the rejection of Claims 1-4 under 35 U.S.C. § 103(a) over Zwiener '741 and '170 should be withdrawn.

Chem Abstracts 98: 198688

Chem Abstracts 98:198688 discloses N-(p-aminobenzoyl)-L-aspartic acid n-butyl (shown below), i-butyl, n-propyl, and i-propyl diesters. The Examiner suggests that the disclosed formulas are specific formulas included in the broad formula as recited in Claim 1. Applicants respectfully request reconsideration.



In the presently claimed aspartate, the linking group X is defined as an organic residue obtained by removing the primary amino group or groups from a mono or polyamine which has (cyclo)aliphatically bound amino groups. In other words, X is a (cyclo)aliphatic group. "Aliphatic compounds are saturated or unsaturated chains of carbon. Aliphatic molecules consist, generally, of a backbone of carbon atoms and other atoms bound to this carbon chain—most frequently hydrogen, oxygen, nitrogen, sulfur, and various halides. The term aliphatic is used to distinguish such molecules from those deemed *aromatic* because of an aromatic ring structure." Wikipedia, http://en.wikipedia.org/wiki/Aliphatic_compound.

However, the group corresponding to X in the structures disclosed by Chem Abstracts 98:198688 contain an aromatic structure, and thus are not aliphatic as required in the present claims. Further, there is no suggestion or motivation in Chem Abstracts 98:198688 to use anything but an aromatic structure for X.

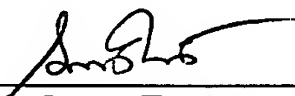
Because Chem Abstracts 98:198688 does not disclose, suggest, or provide any motivation to make an aliphatic aspartate as is presently claimed, it cannot render the claims obvious and the rejection under 35 U.S.C. § 103(a) should be withdrawn.

CONCLUSION

Applicants request reconsideration of the rejections and submit that the present application is in condition for allowance.

For all of the reasons indicated above, reconsideration of the rejections and a Notice of Allowance are respectfully requested for Claims 1-4. If the Examiner is of the opinion that the present application is in condition for other than allowance, he is requested to contact the Applicants' agent at the telephone number given below so that additional changes to the claims may be discussed.

Respectfully submitted,

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